



USE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN EDUCATION FOR EXCEPTIONAL CHILDREN

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Abstract

The end of the 20th century and beginning of the 21st century witnessed very tremendous changes one of them being in the field of Information and Communication Technology. The use of ICT has basically changed all forms of endeavor within business, governments and of course Education! ICT in education is the need of the hour and it has moved from Teacher-Centered to Students –Centered Learning. Innovative use of technology can help to engage students with Learning Disorder to learn in an enjoyable and meaningful way. The ICT provide a number of learning opportunities in formal as well as non-formal educational settings. Technologies like web-based learning provide a number of opportunities to the exceptional learners like self-paced instruction, flexibility, self-correction etc. Different communication technologies such as electronic learning, mobile learning etc can be used to enrich, enliven or add variety to the learning of exceptional children. It would be wrong, however, to claim that ICT is the answer to the needs of every gifted or talented pupil. It is merely another strategy to address the wide-ranging needs of this group. Thus, this paper focuses on the need and benefit of using ICT to cater to the needs of exceptional children.

Key words: *Information and Communication Technology, Exceptional Children.*

INTRODUCTION

As world is moving rapidly towards digital information, the role of ICTs in education becoming more and more important and this importance will continue to grow and develop in 21st century. ICT in education is the need of the hour and it has moved from Teacher-Centered to Students –Centered Learning. Considering a wide diversity of individual learners' capacities, the civil society must find the ways to remove barriers to learning and provide appropriate conditions for equal access to education.

The *inclusion* of students who have experienced barriers to learning in mainstream education has become a part of a global movement for human rights ICTs offer a great potential to support lifelong learning for all groups of students, including those who have special educational needs. ICT can be used **both in and out of school to aid education**, improve social communication and assist relationships with others. ICT can help to address specific aptitudes in children – for example, acceleration – by the use of individual learning systems. It would be wrong, however, to claim that ICT is the answer to the needs of every exceptional pupil. It is merely another strategy to address the wide-ranging needs of this group.

EXCEPTIONAL CHILDREN

The term exceptional children includes children who experience difficulties in learning as well as those whose performance is so superior that modifications in curriculum and instruction are necessary to help them fulfill their potential. Thus, exceptional children is an inclusive term that refers to children with learning and/or behavior problems, children with physical disabilities or sensory impairments, and children who are intellectually gifted or have a special talent. Learners with a disability in one area may well have remarkable abilities in another. The terms used for such children are "**twice-exceptional**" or "**twice-gifted**." Some of the world's most famous thinkers and celebrities have been learning disabled and have excelled at a certain talent or skill. Einstein, Edison, Charles Schwab, the millionaire owner of the discount stock brokerage firm, the list goes on.

Students with Learning disability often demonstrate unusual abilities to "**think outside the box**," and the products of their expression, be it artwork, poetry, music, or interpersonal skills, made possible by hard work and a determination of spirit, are no less remarkable and praiseworthy than those of their non-disabled peers. Learning disabilities is the umbrella term used to capture many different types of specific disorders and while some people have problems in one or more specific areas of learning and performance, they may enjoy success and even excel in others.

USE OF ICT APPLICATIONS FOR EXCEPTIONAL / LEARNERS DISABLED CHILDREN

- Promotes greater independence by enabling them to perform tasks that they were formerly unable to accomplish, or had great difficulty accomplishing.
- Educational media may help to overcome the academic difficulties of children with learning disabilities.
- Communicational technologies like web-based learning can help disabled children in overcoming severe learning problems and permit a greater number of opportunities for learner's epistemological styles, pace of learning, flexibility and modification of learning.



ICT CAN ENHANCE TEACHING AND LEARNING

For pupils with **physical and sensory disabilities**, ICT can be used to:

- provide switch access to classroom activities such as matching, sorting and word processing
- translate text into speech and speech into text
- prepare work which is specially adapted with large fonts, symbols and particular colours

For pupils with **learning difficulties**, using ICT can:

- provide pupils with a clutter-free working environment where programs are linked to pupils' ability
- enhance the development of activities which are clear, focused and attractive to pupils
- support language development activities and offer multi-sensory ways of learning
- offer a medium for differentiated activities

For pupils with **emotional and behavioral difficulties**, using ICT can:

- allow pupils to be motivated and offer opportunities for success
- give pupils the opportunity to be responsible for their own learning
- allow pupils to work on tasks that are more manageable and achievable

ICT: AN ACCESS TECHNOLOGY

1. **Physical access** -ICT enables certain pupils to learn using the computer in much the same way as their classmates, but by interacting with it in a different way, in other words liberating the pupil from the physical barriers to learning.
 - **The Big Keys Plus keyboard-** Pupils using this keyboard will be able to be included in the same work as everybody else in the class. The keyboard can be equally useful to pupils with physical or learning difficulties as to those without any particular needs, especially as it's in lowercase which would be particularly useful to primary age.
 - **A plastic grid-** designed to cover the keyboard so that the learner's fingers can be guided to the letters they actually want. So they can rest their hands on the keyboard but their fingers can press the keys they need. When using an ordinary mouse, small movements of the mouse on the mouse mat generates very large movements on the screen. If a child has poor fine motor skills small movements with the mouse leads to large movements on the screen.
 - **The Big Track Trackball mouse-** has a large ball which can be moved in any direction. Large movements of this ball generates very small movements on the screen and a child with poor fine motor skills is able to move wherever they need to on the screen and use the two mouse buttons to select what they want.
2. **Cognitive access-** children can use ICT to enhance their learning because the curriculum can be presented in different ways to match individual learning preferences. For example, using multimedia means that information is not restricted to the written word but can also be conveyed by video or audio.
3. **Supportive access-** ICT can support children who need to use it to help them with particular activities, where technology is being used to support pupils in particular areas of difficulty.

ICT –SOLUTION OF THE PROBLEM

Some pupils in your class may have problems in accessing the curriculum due to learning difficulties with reading, writing, spelling or numeracy, visual or hearing problems, emotional or behavioral problems. I.C.T. can, in many cases, help to alleviate the problems. ICT can provide a powerful resource to support and enhance curriculum experiences, particularly for students with learning difficulties. Equipment ranges from '**low-tech**' aids such as tape recorders to '**hi-tech**' solutions such as computers and peripheral equipment and includes the following:

- **Multimedia** - combinations of moving images, graphics, text and sound which enable learners who may have difficulties using one sense (such as listening) to use all their senses to reinforce learning. It can present sounds, photographs and video, as well as text and graphics on the screen, gives new directions for working with all students who have learning difficulties.
- **Overlay keyboards or on-screen grids** - alternatives to the traditional keyboard which enable learners to use symbols or other support alongside traditional text. It offer a means of presenting information clearly or giving additional support for writing. A word processor with a topic list or word bank can also help by providing instant access to specialist vocabulary
- **Speech recognition systems** – run on personal computers and enable users to create text, or control the computer solely by voice input
- **Spell checkers, glossaries and thesauri** - support dyslexic and other learners by enabling them to check the accuracy of their work. It can support learners who have difficulties with sequencing and memorizing



- **Touch screens** - sensitive display screens that enable the computer to react to the touch of a finger or stylus. These can aid learners who may prefer to make simple selections on screen, rather than use a keyboard which may appear detached from the activity they are working on
- **Word processors** including predictive word processors and those with voice output - support the creation of text by suggesting words and checking accuracy
- **Drill and practice software** – helps learners who need to ‘over learn’ concepts and knowledge and practice their basic skills independently, by presenting the same skills in a range of contexts
- **Assessment software** – enables teachers to assess the abilities of students, either by screening all students, or focusing on individuals to diagnose difficulties, analyze needs and suggest solutions
- **CD-ROMs, digital resources and the internet** - offer a wealth of material that can be matched to gifted and talented pupils' individual needs and enable them to develop a higher level of skill in thinking and handling information

Everyone who works with the individual will need to understand the small steps that contribute to progression, and the purpose and detail of those steps. They will need to ensure that progression is an integral part both of the educational objectives and of the technology that supports them. Recording and monitoring the young person's response is essential in order to recognize the progress being made.

CONCLUSION

ICT applications can thus be effectively designed to cater to the needs of children with learning disabilities as it provides opportunities for variety in learning, collaborative learning, flexible thinking, incidental learning etc. The use of different ICT applications could facilitate the process of acquiring the various academic skills that are needed for learning and create the wide range of learning opportunities for these educationally backward learners. It certainly meets the needs of disabled learners with varied learning styles such as visual, auditory or kinesthetic learning styles. Also it helps to enhance the learning of such pupils by using different instructional techniques and thus integrating educational technology in the classroom. Adoption of different media for learning can help engage such disabled individuals which help them to learn in an enjoyable and meaningful way. So it is imperative to adopt different educational media to help these academically weak learner's to improve in academics.

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